



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant

HARD, et al.

Ser. No.

08/621,631

Fil. Date

26 March 1997

For

RECOVERY OF METAL VALUES

Examiner Art Unit

Unknown

Unknown

HONORABLE COMMISSIONER OF PATENTS AND TRADEMARKS Washington, DC 20231



# FORM PTO-1449 INFORMATION DISCLOSURE STATEMENT BY APPLICANT(S)

#### **U.S. PATENT DOCUMENTS**

Examiner Initial	_Patent <u>Number</u>	<u>Date</u>	<u>Name</u>	Class/ <u>Subclass</u>	Filing <u>Date</u>	Enclosed
4	2,767,047	Oct. 16, 1956	Wilhelm et al.	23-23	Oct. 20, 1953	Yes
	2,953,453/	Sep. 20, 1960	Foos	75-121	Jun. 20, 1958	Yes
	2,962,372 /	Nov. 29, 1960	Foos et al.	75-121	Jan. 17, 1958	Yes
	3,117,833	Jan. 14, 1964	Pierret	23-19	Sep. 25, 1958	Yes
	3,300,297	Jan. 24, 1967	Field	75-24	May 26, 1964	Yes
	3,658,511	Apr. 25, 1972	Gustison	C22B 51/00	Dec. 22, 1969	Yes
	3,712,939	Jan. 23, 1973	Capps et al.	C22B 50/00	Mar. 29, 1971	Yes
	3,972,710 /	Aug. 3, 1976	Meyer	C22B 34/24	Jul. 9, 1975	Yes
	4,164,417	Aug. 14, 1979	Gustison	C22B 34/24; C22C 27/02	Apr. 28, 1978	Yes
	4,451,438	May 29, 1984	Floeter et al.	C01G 43/00; C01G 33/00; C01G 35/00; C01F 15/00	Sep. 29, 1982	Yes
+	4,718,996	Jan. 12, 1988	Vanderpool et al.	C22B 34/36; C22B 50/00	Sep. 4, 1986	Yes
+,	4,808,384	Feb. 28, 1989	Vanderpool et al.	C01G 41/00	Dec. 21, 1987	Yes
6/	5,023,059	Jun. 11, 1991	Bielecki et al.	B01D 11/00	Nov. 2, 1988	Yes





Examiner Initial	Patent <u>Number</u>	<u>Date</u>	Name	Class/ <u>Subclass</u>	Filing <u>Date</u>	Enclosed
-	5,084,253	Jan. 28, 1992	Pollock et al.	C01G 33/00; C22B 34/20	Nov. 13, 1989	Yes
	5,437,848	Aug. 1, 1995	Hard	C01G 56/00; C01G 57/00	Jul. 10, 1992	Yes
	5,492,680	Feb. 20, 1996	Odekirk	C01F 17/00	Aug. 4, 1994	Yes

#### **FOREIGN PATENT DOCUMENTS**

Examiner <u>Initial</u>	Document Number	<u>Date</u>	Country	Class/ <u>Subclass</u>	Translation Yes No	Enclosed
	0 041 459	— Jun. 1, 1981	<del>Europ</del> ea <del>n</del>	C22B 34/24; C01G 33/00; C01G 35/00	Abstract	Yes
	<del>2 438 623</del>	<del>Jan. 23, 1980</del>	France	C01B 15/047	Abstract	Yes

### **OTHER DOCUMENTS**

(Including Author, Title, Date, Pertinent Pages, Etc.)

Examiner <u>Initial</u>		Document	Enclosed
<b>&gt;</b>	<del>-1</del>	PCT Application No. WO-90/02823, published Mar. 22, 1990.	Yes
<u> </u>	2./	PCT Application No. WO 95/13985, published May 26, 1995.	Yes
	3	PCT Int'l Appin. No. PCT/US97/04013 Search Report	
		~mailed July 16, 1997.	Yes
	4.	PCT Application No. WO 94/01190, published Jan. 20, 1994.	E AO
	<del>-5.</del>	PCT Int'l Appln. No. PCT/US97/04089 Search Report	
· · · · · · · · · · · · · · · · · · ·		mailed August 12, 1997.	Yes
	6.	PCT Int'l Appin. No. PCT/US97/04088 Search Report	
		mailed August 5, 1997.	Yes
4	7.	"Extractive metallurgy of niobium, tantalum and vanadium," by C.K. Gupta, pages 405-444	Yes

**EXAMINER** 

**DATE CONSIDERED** 

EDWARD A. MILLER PRIMARY EXAMINER

EXAMINER: Initial/in, Eizkion considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

12317:142215 093\502204.DOC